AMENDMENTS TO THE CLAIMS

1-14.   (Canceled)

15.   (Previously Presented) An integrated system for monitoring and treating diabetes, the system comprising:

a glucose sensor, wherein the glucose sensor substantially continuously measures glucose in a host for a period exceeding one hour, and outputs a data stream, including the data stream comprising one or more sensor data points;

a receiver operably connected to the glucose sensor, wherein the receiver is configured to receive the data stream; and

a medicament delivery device, wherein the medicament delivery device is physically detachably connectable to the receiver, wherein at least one of the receiver and the medicament delivery device comprises programming that automatically detects impending clinical risk and calculates a therapy recommendation responsive to the impending clinical risk, and wherein the at least one of the receiver and the medicament delivery device further comprises programming that requires the at least one of the receiver and the medicament delivery device to be at least one of validated and confirmed by a user interaction in response to a prompt on the user interface.

16.   (Original) The integrated system according to claim 15, wherein the glucose sensor comprises an implantable glucose sensor.

17.   (Original) The integrated system according to claim 15, wherein the glucose sensor comprises a long-term subcutaneously implantable glucose sensor.

18.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device comprises a syringe detachably connected to the receiver.

19.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device comprises one or more transdermal patches detachably connected to the receiver.

20.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device comprises an inhaler or spray delivery device detachably connected to the receiver.

21.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device comprises a pen or jet-type injector detachably connected to the receiver.

22.   (Original) The integrated system according to claim 15, wherein the medicament delivery device comprises a transdermal pump.

23.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device comprises a computer system associated with an implantable pump.

24.   (Original) The integrated system according to claim 15, wherein the medicament delivery device comprises a manual implantable pump.

25.   (Previously Presented) An integrated system for monitoring and treating diabetes, the system comprising:

    a glucose sensor, wherein the glucose sensor substantially continuously measures glucose in a host for a period exceeding one hour, and outputs a data stream, including one or more sensor data points;

    a receiver operably connected to the glucose sensor, wherein the receiver is configured to receive the data stream;

    a cell transplantation device; and

    wherein the receiver comprises a processor, and wherein the processor comprises programming configured to determine a host's metabolic response to cell transplantation by evaluating the sensor data points substantially corresponding to delivery or release of cells from the cell transplantation device.

26.   (Canceled)

27.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device is operably connectable to the receiver by a wireless connection.

28.   (Previously Presented) The integrated system according to claim 15, wherein the medicament delivery device is operably connectable by a wired connection.

29.   (Currently amended) An integrated system for monitoring and treating diabetes, the system comprising:

a continuous glucose sensor, wherein the glucose sensor substantially continuously measures glucose in a host for a period exceeding one hour, and outputs a data stream, including one or more sensor data points;

a receiver operably connected to the glucose sensor, wherein the receiver is configured to receive the data stream;

a medicament delivery device, wherein the delivery device is at least one of physically connectable and operably connectable to the receiver; and

a single point glucose monitor configured to receive a biological sample from the host and measure ~~the~~ a concentration of glucose in the sample, wherein the single point glucose monitor is operably connectable to the receiver, and wherein the receiver comprises programming configured to calculate at least one ~~of a type, an amount, and a timing~~ parameter of a medicament to deliver via the medicament delivery device, wherein the parameter is selected from the group consisting of a type of medicament, an amount of medicament, a timing of delivery of medicament, and combinations thereof, wherein the programming configured to calculate comprises a glucose concentration measured by the single point glucose monitor as an input value.

30.   (Previously Presented) The integrated system according to claim 29, wherein glucose sensor comprises an enzyme membrane system for electrochemical detection of glucose and the single point glucose monitor comprises an enzyme membrane system for electrochemical detection of glucose.

31.   (Canceled)

32.   (Previously Presented) An integrated system for monitoring and treating diabetes, the system comprising:

a glucose sensor, wherein the glucose sensor substantially continuously measures glucose in a host for a period exceeding one hour, and outputs a data stream, including one or more sensor data points;

a receiver operably connected to the glucose sensor, wherein the receiver is configured to receive the data stream; and

a medicament delivery device, wherein the delivery device is at least one of physically and operably connectable to the receiver, wherein the receiver comprises a

processor, wherein the processor comprises programming configured to calculate and output medicament delivery instructions, and wherein the processor further comprises programming configured to validate the medicament delivery instructions by prompting a user to provide a biological sample to a single point glucose monitor and by validating the medicament delivery instructions responsive to data obtained from the single point glucose monitor.

33.   (Canceled)

34.   (Previously Presented) An integrated system for monitoring and treating diabetes, the system comprising:

a glucose sensor, wherein the glucose sensor substantially continuously measures glucose in a host for a period exceeding one hour, and outputs a data stream, including one or more sensor data points;

a receiver operably connected to the glucose sensor, wherein the receiver is configured to receive the data stream; and

a medicament delivery device, wherein the delivery device is at least one of physically and operably connectable to the receiver, wherein the receiver is configured to receive medicament delivery data responsive to medicament delivery for a first time period from the medicament delivery device, and wherein the receiver comprises a processor, and wherein the processor comprises programming configured to determine a host's metabolic response to the medicament delivery by evaluating the sensor data points substantially corresponding to delivery and release of the medicament delivery for the first time period, wherein the processor comprises programming configured to estimate glucose values for a second time period responsive to glucose sensor data and the host's metabolic response.

35.   (Previously Presented) The integrated system according to claim 34, wherein the processor comprises programming configures to calculate medicament therapy for a second time period responsive to sensor data and the host's metabolic response to the medicament delivery.

36.   (Canceled)

37.   (Previously Presented) The integrated system according to claim 25, wherein the cell transplantation device comprises beta islet cells.

38.   (Currently amended) The integrated system according to claim 25, wherein the receiver comprises a processor configured to store information about the cell transplantation device, wherein the information comprises at least one <u>item of information selected from the group consisting</u> of: 1) time of implant of the cell transplantation device; 2) amount of cells transplanted within the cell transplantation device; <s>and</s> 3) type of cells transplanted within the cell transplantation device<u>; and 4) combinations thereof</u>.

39.   (Previously Presented)The integrated system according to claim 25, wherein the receiver comprises a processor, and wherein the processor comprises programming configured to determine a host's metabolic response to the cell transplantation device by evaluating the sensor data points substantially corresponding to a time during which the cell transplantation device is implanted in a host.

40.   (Currently Amended) The integrated system according to claim 29, wherein the single point glucose monitor is detachably connectable to <u>the</u> receiver.

41.   (Previously Presented)The integrated system according to claim 29, wherein the single point glucose monitor is operably connectable to the receiver by a wired connection.

42.   (Previously Presented)The integrated system according to claim 29, wherein the single point glucose monitor is operably connectable to the receiver by a wireless connection.

43.   (Currently Amended) The integrated system according to claim 32, wherein the <s>validation module comprising</s> programming configured to validate the medicament delivery instructions is further configured to validate the medicament delivery instructions responsive to data input into said receiver.

44.   (Currently Amended) The integrated system according to claim 32, wherein the medicament delivery device comprises at least one <u>device selected from the group consisting</u> of an inhaler, a spray device, a pen, jet-type injector, a transdermal pump<u>,</u> <s>and</s> an implantable pump<u>,</u> <u>and combinations thereof</u>.

45.   (Currently Amended) The integrated system according to claim 32, wherein the processor comprises programming configured to automatically run the <s>validation module</s> programming <u>configured to validate the medicament delivery instructions</u> when <s>the</s> <u>a</u> rate of acceleration or deceleration of the sensor data is outside a predetermined range.

46.   (Currently Amended) The integrated system according to claim 32, wherein the processor comprises programming configured to automatically run the validation module programming <u>configured to validate the medicament delivery instructions</u> when ~~the~~ <u>a</u> rate of change of the sensor data is outside a predetermined range.

47.   (Currently Amended) The integrated system according to claim 32, wherein the <u>programming configured to validate the medicament delivery instructions</u> ~~validation module~~ comprises programming configured to request information, wherein the information requested comprises at least one <u>item of information selected from the group consisting</u> of: time of day, meals, meal time, regular medicament delivery, sleep, calories, carbohydrates, exercise, ~~and~~ sickness<u>, and combinations thereof</u>.

48.   (Previously Presented) The integrated system according to claim 34, wherein the programming configured to determine a host's metabolic response to the medicament delivery comprises a pattern recognition algorithm.

49.   (Currently Amended) The integrated system according to claim 34, wherein the programming configured to determine a host's metabolic response to the medicament delivery utilizes an input including at least one <u>input selected from the group consisting</u> of time of medicament delivery, amount of medicament delivery, ~~and~~ type of medicament<u>, and combinations thereof</u>.

50.   (Previously Presented) The integrated system according to claim 34, wherein the programming configured to determine a host's metabolic response to the medicament delivery is programmed in the processor to be repeated at predetermined intervals.

51.   (Previously Presented) The integrated system according to claim 34, wherein the programming configured to determine a host's metabolic response to the medicament delivery is programmed in the processor to be triggered by user input.

52.   (Previously Presented) The integrated system according to claim 34, wherein the programming configured to determine a host's metabolic response to the medicament delivery is programmed in the processor to be repeated during a predetermined start-up time period.

53.   (Currently Amended) The integrated system according to claim 32, wherein the single point glucose monitor is detachably connectable to <u>the</u> receiver.

54.   (Previously Presented)The integrated system according to claim 32, wherein the single point glucose monitor is operably connectable to the receiver by a wired connection.

55.   (Previously Presented)The integrated system according to claim 32, wherein the single point glucose monitor is operably connectable to the receiver by a wireless connection.